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UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE

4063 September 30, 1970

ESTABLISHMENT REPORT
FOR
BANNOCK CREEK RESEARCH NATURAL AREA
WITHIN
BOISE NATIONAL FOREST
BOISE COUNTY
IDAHO

U.S. GOVERNMENT PRINTING OFFICE : 1968 O—298-607

6200-7 (4/68)

DESIGNATION ORDER

By virtue of the authority vested in me by the Secretary of Agriculture under 36 CFR 251.23, I hereby designate as the Bannock Creek Research Natural Area that part of the Boise Basin Experimental Forest established on June 6, 1933, described in the establishment report by Russell A. Ryker and Glenn S. Bradley, dated September 30, 1970. Said lands shall hereafter be administered as a research natural area, subject to the said regulations and instructions thereunder.

8-27-71
Date

Edward P. Cliff
Chief

ESTABLISHMENT REPORT
FOR
BANNOCK CREEK RESEARCH NATURAL AREA
WITHIN
BOISE NATIONAL FOREST
BOISE COUNTY
IDAHO

Prepared by Russell A. Ryker — DATE 1/6/71
Acting Project Leader

AND

Glenn Bradley — Date 9/30/70
District Forest Ranger

Approved by Howard E. Ahlenslager — Date 1/6/71
Forest Supervisor

Approved by Vern Hamre — Date 7/19/71
Regional Forester

Approved by Robert W. Harris — Date 8/13/71
Station Director

Approved by R. Max Hensley — Date
Director, Division of Recreation

Approved by R Keith Arnold — Date AUG 26 1971
Deputy Chief (Research)

Approved by Edward P. Cliff — Date 8-30-71
Chief

Principal Features

This is a 438-acre tract spanning the Bannock Creek drainage within the Boise Basin Experimental Forest. The area runs from the ridge on the southern boundary down the generally northeast-facing slope to Bannock Creek and then up the opposite southwest-facing slope to the ridge along the eastern boundary. Two minor tributaries of Bannock Creek are contained in the portion of the area lying south of the creek and two in the portion to the north.

The area lies within the Idaho Batholith and has soils derived from granitic parent material. The bulk of the area is underlain by fractured granitic bedrock and supports commercial forest stands. The remainder is underlain by massive granitic bedrock and supports a shrub-forb-grass plant community.

The forested area contains Interior Douglas-fir (SAF Type 210), Interior ponderosa pine (SAF Type 237), and the two in mixture. The stands are uncut and have not burned in recent history; however, previous fires are indicated by the presence of overmature ponderosa pine growing on sites where Douglas-fir appears to be the climax species. Stands within the area are at various stages of succession leading, for most of the forested area, to a Douglas-fir climax.

This area also contains several large ponderosa pine trees, the largest being 73 inches d.b.h. and 158 feet tall.

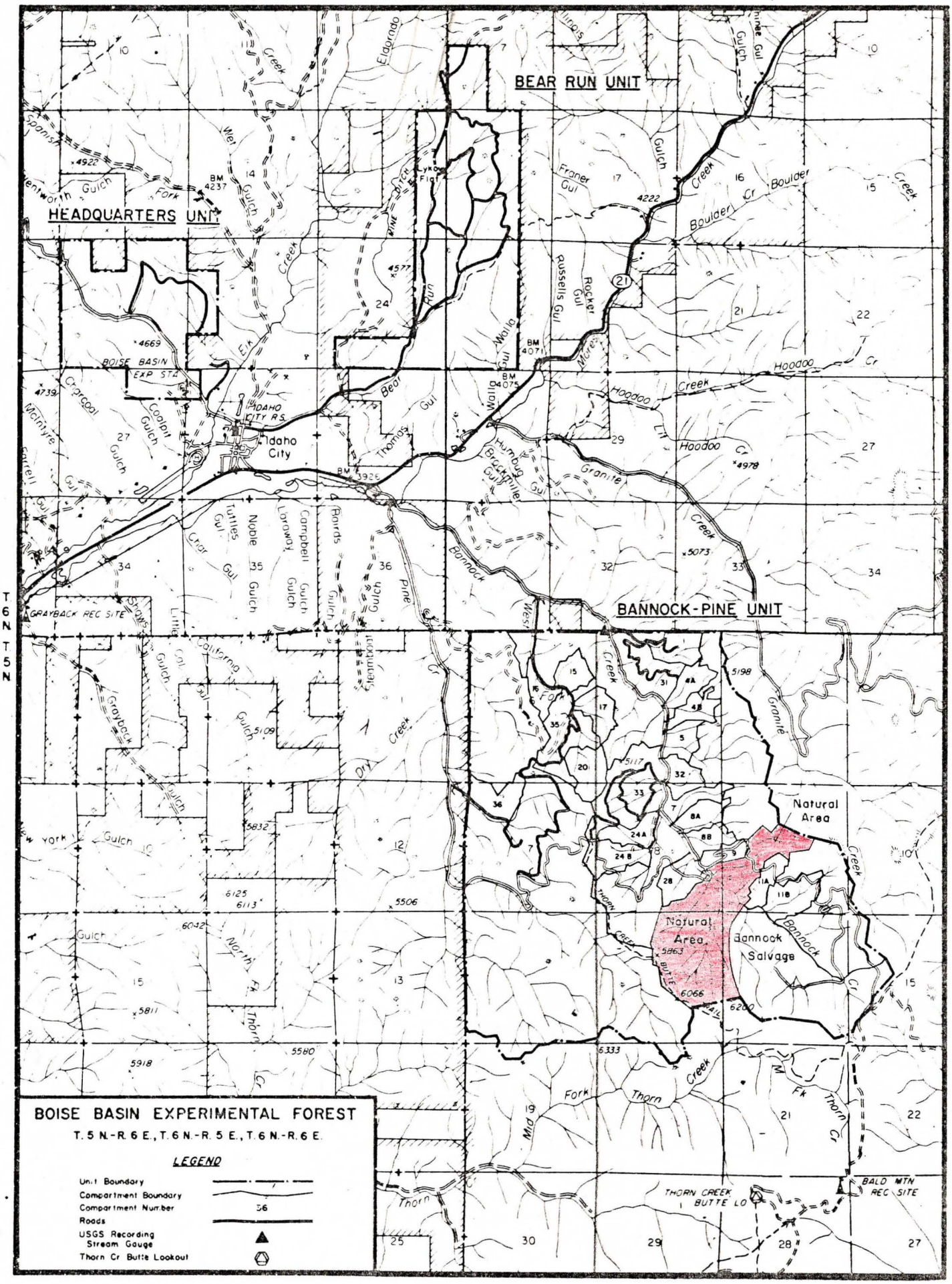
Location

The proposed Bannock Creek Natural Area in South Central Idaho is 5-3/4 miles southeast of Idaho City (see attached map). It lies within Sections 8, 9, 16, and 17; Township 5 North, Range 6 East. It is entirely National Forest land. The road to Thorn Creek Butte Lookout bisects the area on the southwest-facing slope.

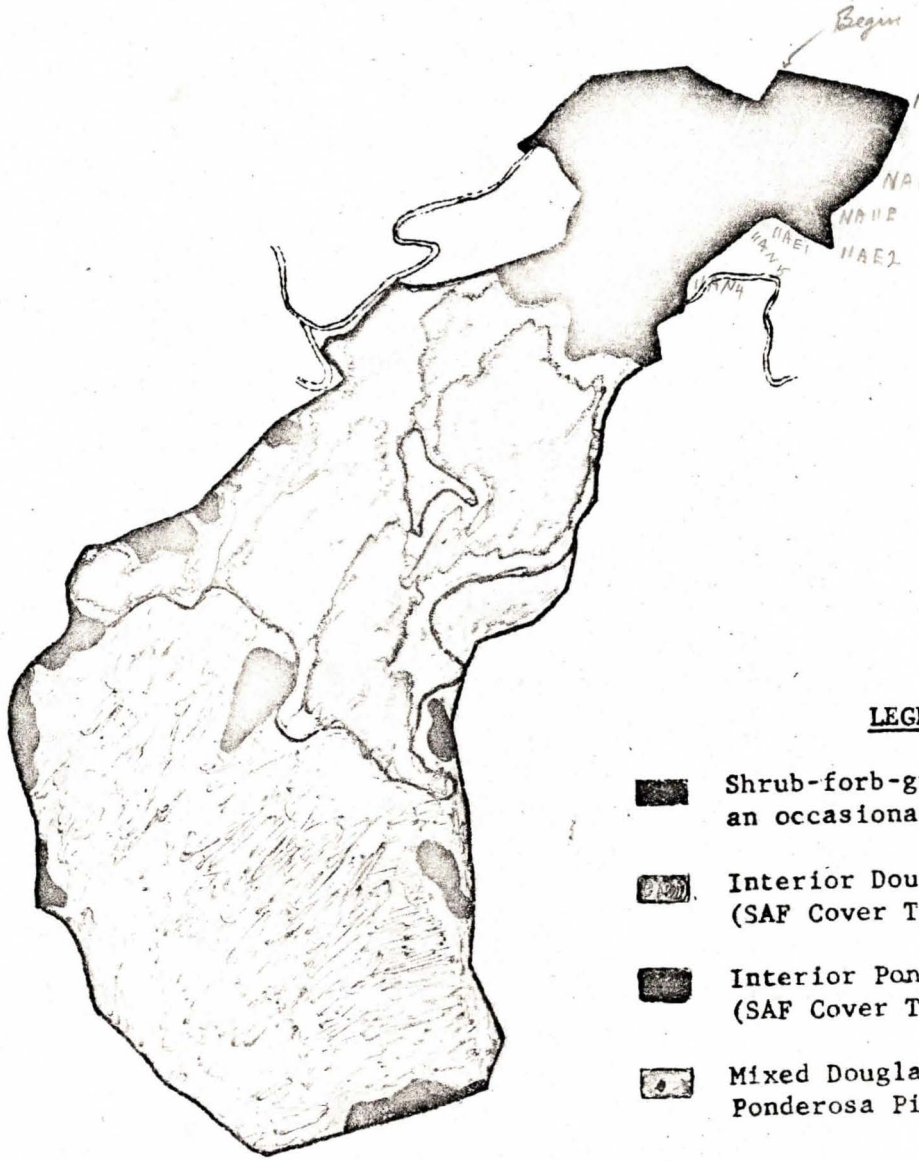
The legal description of the boundary is enclosed with this report.

Area by Cover Types

The upper northerly slopes and the coves have stands of Interior Douglas-fir (SAF Type 210). The ridges and lower slopes in the portion of the

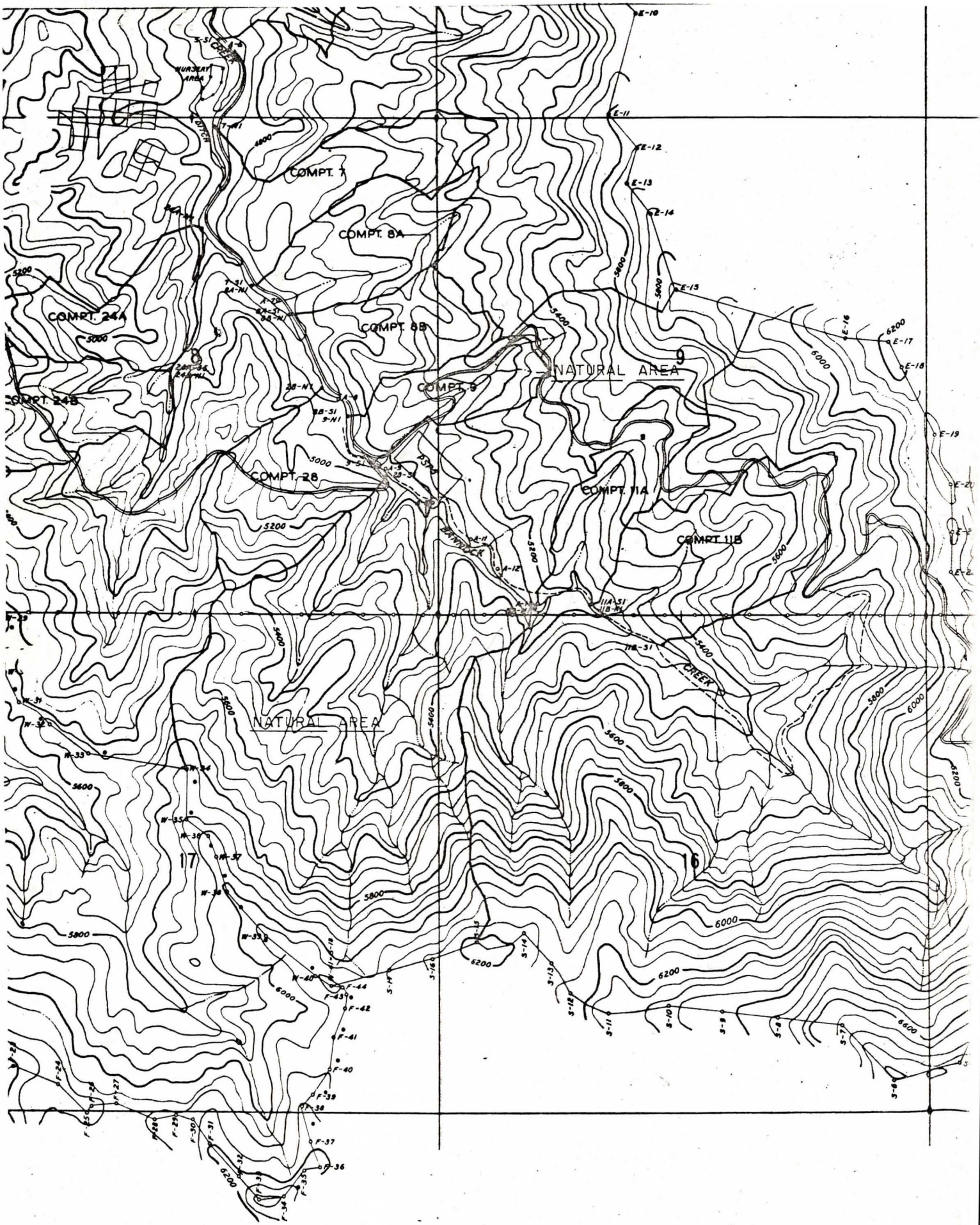

R 5 E R 6 E
T 6 N
T 5 N
BEAR RUN UNIT
HEADQUARTERS UNIT
BANNOCK-PINE UNIT
Idaho City
BOISE BASIN EXP STA
IDAHO CITY R.S.
GRAYBACK REC SITE
Natural Area
Natural Area
Bannock Salvage
THORN CREEK BUTTE LO
BALD MTN REC SITE
BOISE BASIN EXPERIMENTAL FOREST
T. 5 N.-R. 6 E., T. 6 N.-R. 5 E., T. 6 N.-R. 6 E.
LEGEND
Unit Boundary
Compartment Boundary
Compartment Number
Roads
USGS Recording Stream Gauge
Thorn Cr Butte Lookout

(overlay)



LEGEND

- Shrub-forb-grass with only an occasional tree
- Interior Douglas-fir (SAF Cover Type 210)
- Interior Ponderosa Pine (SAF Cover Type 237)
- Mixed Douglas-fir and Ponderosa Pine (see text)


COMPT. 1
COMPT. 8A
COMPT. 8B
COMPT. 9
COMPT. 24A
COMPT. 24B
COMPT. 28
COMPT. 11A
COMPT. 11B
NATURAL AREA
NATURAL AREA
NURSERY AREA
DITCH
BANNOCK CREEK
CREEK
16
17

area south of the creek and most of the lower slopes to the north of the creek support a mixture of ponderosa pine and Douglas-fir In this type the ponderosa pine is present mostly as large over-mature trees. The Douglas-fir dominates the younger age classes, but in patches the pine is also prevalent. Further up the southwest-facing slope coinciding with thinner soils and increased exposure, ponderosa pine (SAF Type 237) is dominant. The upper southwest-facing slope as well as "massive bedrock areas" scattered throughout the area are essentially treeless and support a shrub-forb-grass community. Acreages in each of these four "types" are tabulated below:

Type	Approximate Acreage
Interior Douglas-fir (SAF 210)	193
Interior ponderosa pine (SAF 237)	23
Pine-fir mixture (SAF 210 and 237)	134
Shrub-forb-grass	88
TOTAL	438

The location of the different types can be seen on the following overlay.

Physical and Climatic Conditions

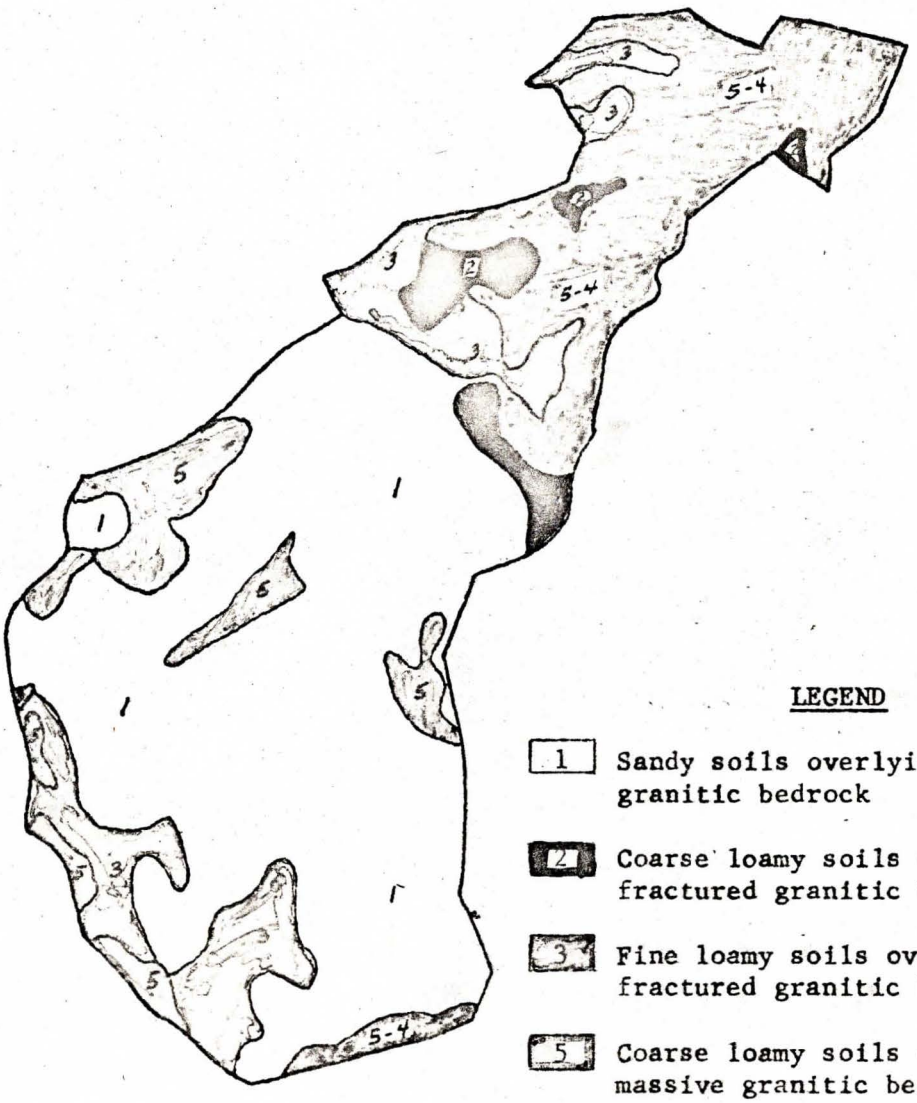
The Boise Basin is in the southwest part of the Idaho Batholith. The Basin is structurally a downwarp with a northwest-southeast axis. The proposed Natural Area is at the southeast end. Elevations range from 5,000 feet along Bannock Creek to 5,950 feet on the ridge north of the creek to 6,200 feet on the ridge at the southern boundary. The topography is classed as mature. Ridgetops are narrow and slopes moderate to steep. Valley bottoms are mostly V-shaped.

Olson[1] described six different soils found within the proposed area (See overlay). All but one are derived in place from the underlying granitic parent material.

Soil Unit No. 1 - The Sandy Upland Soils Overlying Fractured Granitic Bedrock.

These soils have developed from coarse textured granitic rocks.

1/ O. C. Olson. A Soil Survey Report of the Boise Basin Experimental Forest. U. S. Forest Service Intermountain Region - June 1965.



LEGEND

1 Sandy soils overlying fractured granitic bedrock

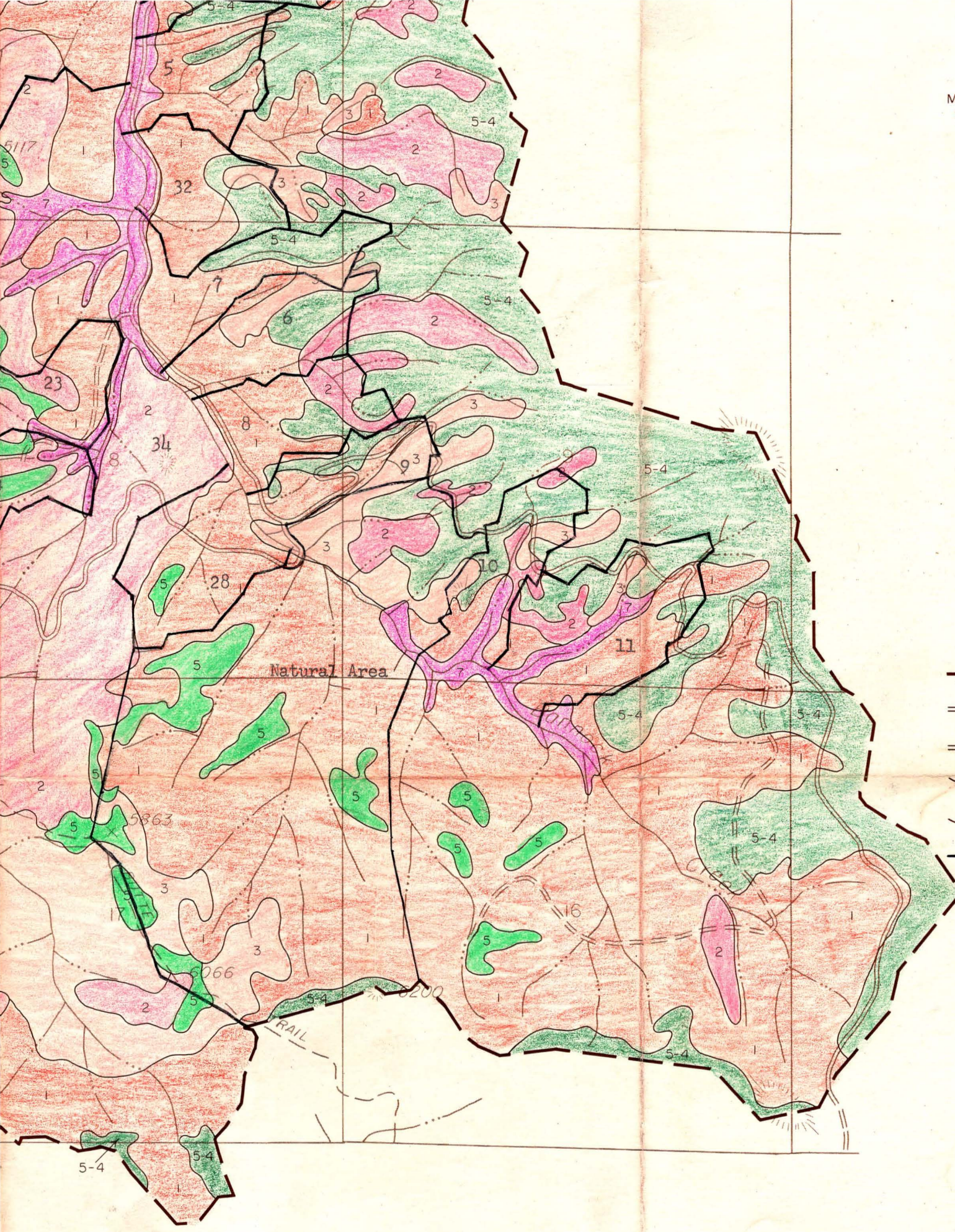
2 Coarse loamy soils overlying fractured granitic bedrock

3 Fine loamy soils overlying fractured granitic bedrock

5 Coarse loamy soils overlying massive granitic bedrock

5-4 Coarse loamy and sandy soils, undifferentiated, overlying massive granitic bedrock

7 Well drained alluvial soils, undifferentiated



LEGEND

Mapping Symbol	
1	Sandy soils overlying fractured granitic bedrock
2	Coarse loamy soils overlying fractured granitic bedrock
3	Fine loamy soils overlying fractured granitic bedrock
5	Coarse loamy soils overlying massive granitic bedrock
5-4	Coarse loamy and sandy soils, undifferentiated, overlying massive granitic bedrock
6	Fine loamy soils overlying massive granitic bedrock
7	Well-drained alluvial soils, undifferentiated

- Experimental Forest Boundary
- Dirt Road
- Primitive Road
- Perennial Drainage
- Intermittent Drainage
- Compartment Boundary
- 1 - 36 Compartment Number

U. S. Department Of Agriculture
Forest Service
Region 4, Ogden, Utah

Soils Map of the BANNOCK CREEK—PINE CREEK UNIT

BOISE BASIN EXPERIMENTAL FOREST

T. 5 N., R. 6 E., Boise Meridian

IDAHO
1965

0 1/4 1/2 3/4 1 Mile
Scale

The slopes upon which these soils have developed vary from between 30 percent to over 65 percent with the average probably greater than 50 percent. Depth to the root-penetrated bedrock material varies primarily with topographic position. These soils typically are about 6 to 10 inches deep on the ridges, about 18 to 24 inches deep on the smooth midslope positions and may exceed 40 inches on the toe slopes.

Soil Unit No. 2 - Coarse Loamy Upland Soils Overlying Fractured Granitic Bedrock.

The soils of this unit have developed on slopes whose gradients vary between 20 and 60 percent with the average being less than 50 percent. These soils have gravelly sandy loam surfaces and sticky sandy loam subsoils.

Soil Unit No. 3 - Fine Loamy Upland Soils Overlying Fractured Granitic Bedrock.

The soils of this unit have developed most commonly on slopes less than 45 percent. The underlying rock substrata are fine grained rocks relatively high in clay-forming minerals.

Soil Unit No. 4 - Sandy Upland Soils Overlying Massive Granitic Bedrock.

These soils have developed on massive and apparently impermeable or only slowly permeable granitic bedrock. The rock is weathered but relatively unfractured. The penetration of plant roots seems to be restricted essentially to the solum. The slopes upon which the soils of this unit have developed are typically convex and have 25 to 50 percent gradients. Southerly aspects predominate but all aspects are represented.

Soil Unit No. 5 - Coarse Loamy Upland Soils Overlying Granitic Bedrock.

The surface horizons of these soils are gravelly sandy loams the subsoils are also gravelly sandy loams but contain sufficient clay so as to be sticky when wet.

The physical nature of the bedrock is essentially similar to that underlying soils of Unit 4, but the composition may differ slightly in the amount of clay-forming minerals.

Soil Unit No. 7 - Well-Drained Alluvial Soils

These soils are on the bottomlands along Bannock Creek. The parent material is granitic alluvium.

The approximate positions of the various soil units are shown on the following overlay. Approximate acreages in each unit are as follows:

Unit No.	Acreage
1	240
2	11
3	54
5	39
5-4	87
7	7

The mean annual precipitation according to records for Idaho City, which is at an elevation of 4,000 feet, is 23.4 inches. More than one-half comes as winter snowfall.

The mean annual temperature at Idaho City is 44.3°F. The mean monthly temperature for July is 66.7°F, and for January 23.3°F. The average frost-free period is 88 days, from June 12 to September 8. There are occasionally frosts also in July and August. Temperature and precipitation as they occur throughout the year are depicted in Figures 1 and 2.

Description of Values

In addition to stands of various ages of both ponderosa pine and Douglas-fir, this area offers the opportunity to study vegetation relationships within at least five different plant associations. In two of these Douglas-fir is the climax tree species; in two others ponderosa pine is the climax tree; and the fifth one is essentially treeless but with a richer flora of shrubs, forbs, and grasses than one might expect at first sight. The diversity of soils and topography have led to this diversity of vegetation and contribute to the value of the area for ecologic studies.

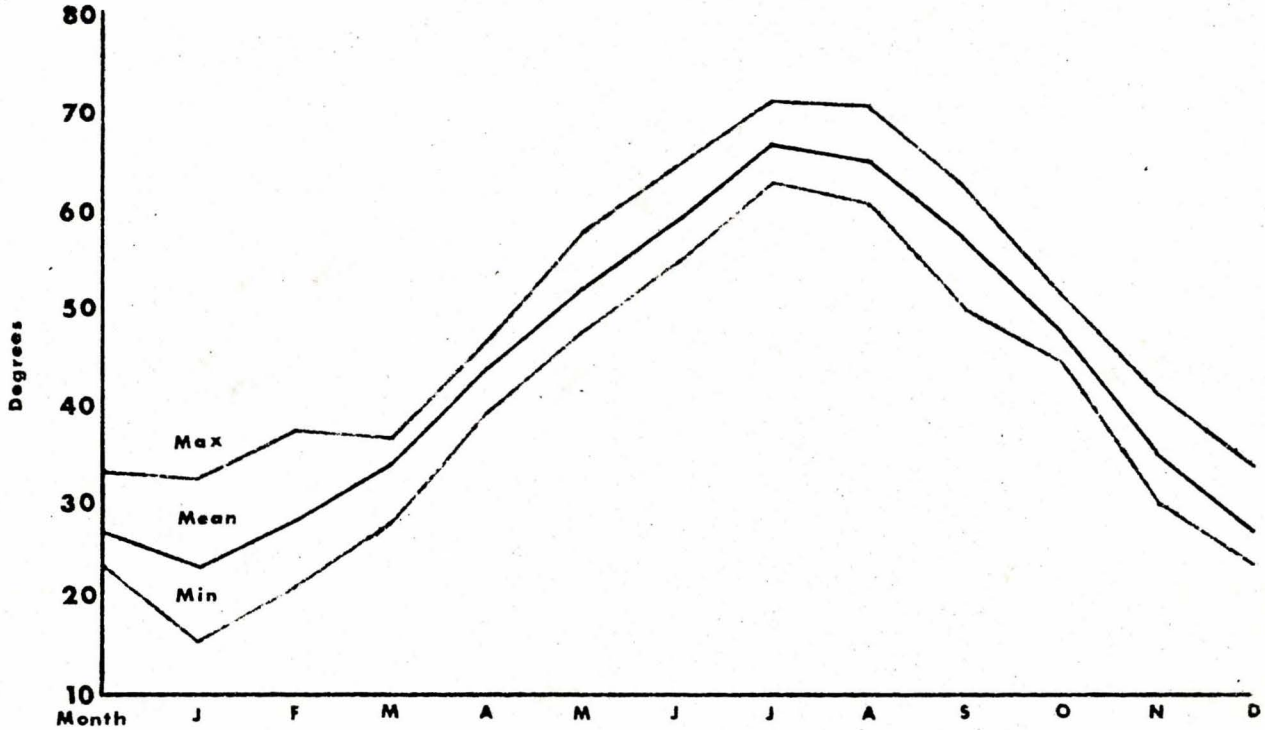


Fig. 1 ---- Mean Monthly Temperature

at Idaho City for Period 1931 thur 1967

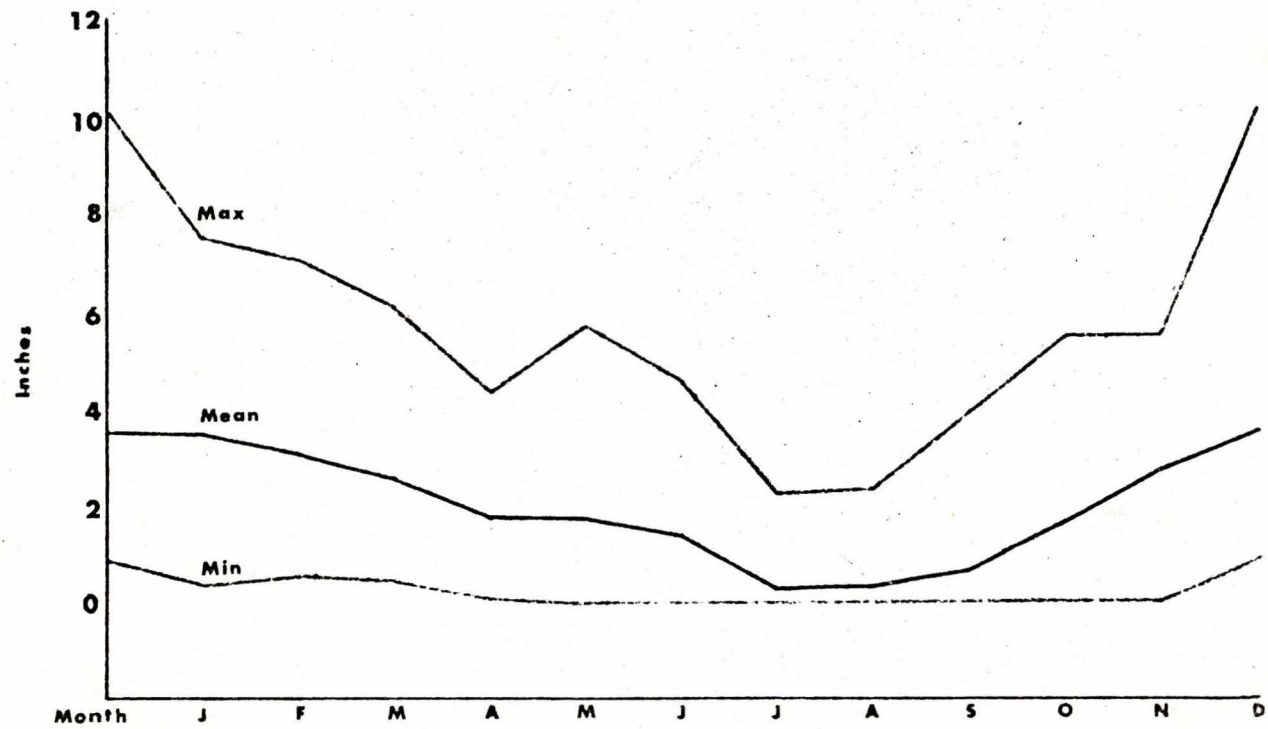


Fig. 2 ---- Mean Monthly Precipitation

at Idaho City for Period 1931 thur 1967

Portions of the proposed area receive moderate use by deer, mostly as summer range. There is probably limited opportunity for wildlife studies except to study how the animals affect the vegetation.

There are no important mineral deposits within the proposed research natural area. It is within the boundaries of the Boise Basin Experimental Forest, established by the Chief on June 6, 1933. It was withdrawn from all forms of appropriation under the public land laws, including the mining laws but not the mineral leasing laws, by Public Land Order No. 993 of August 1954, as published in the Federal Register, page 5333, for August 21, 1954. Therefore, it is not open to mineral exploitation.

Recreation use within the area is relatively light. Deer hunting during the fall months and snowmobiling in the winter are the major activities; however, the majority of use occurs on and adjacent to the roads in the vicinity rather than within the proposed area.

Bannock Creek runs water year-round and is one of the main tributaries of Mores Creek which is a principal stream of the Boise Basin. Mores Creek contributes its water to the Lucky Peak Reservoir about 20 miles downstream from the mouth of Bannock Creek. Because of the small size of Bannock Creek within the proposed natural area there is no fishing activity in that area.

Because of the varied soil and vegetation conditions and because of the likelihood of minimum disturbance in future years, the proposed Bannock Creek Research Natural Area should be a valuable asset for future ecological research.

Area Recommended for Establishment as Research Natural Area

Bannock Creek Research Natural Area

Boise National Forest

Boise Meridian, Idaho

The boundary of the research natural area is shown on the maps in the establishment report dated September 30, 1970, and is within the following legal subdivisions:

T. 5 N., R. 6 E.,

Section 8, $SE\frac{1}{4}NE\frac{1}{4}SE\frac{1}{4}$, $S\frac{1}{2}SW\frac{1}{4}SE\frac{1}{4}$, $SE\frac{1}{4}SE\frac{1}{4}$;

Section 9, $S\frac{1}{2}SW\frac{1}{4}NE\frac{1}{4}$, $SE\frac{1}{4}SW\frac{1}{4}NW\frac{1}{4}$, $S\frac{1}{2}SE\frac{1}{4}NW\frac{1}{4}$, $N\frac{1}{2}SW\frac{1}{4}$ $SW\frac{1}{4}SW\frac{1}{4}$, $NW\frac{1}{4}SE\frac{1}{4}SW\frac{1}{4}$;

Section 16, $N\frac{1}{2}NW\frac{1}{4}NW\frac{1}{4}$, $SW\frac{1}{4}NW\frac{1}{4}NW\frac{1}{4}$, $W\frac{1}{2}SW\frac{1}{4}NW\frac{1}{4}$, $W\frac{1}{2}NW\frac{1}{4}SW\frac{1}{4}$;

Section 17, $NE\frac{1}{4}$, $E\frac{1}{2}E\frac{1}{2}NW\frac{1}{4}$, $NE\frac{1}{4}SE\frac{1}{4}$, $N\frac{1}{2}NW\frac{1}{4}SE\frac{1}{4}$, $SE\frac{1}{4}NW\frac{1}{4}SE\frac{1}{4}$, $NW\frac{1}{4}SE\frac{1}{4}SE\frac{1}{4}$.

The irregular area, as shown on the maps within the above-described subdivision, aggregates 438 acres, more or less.